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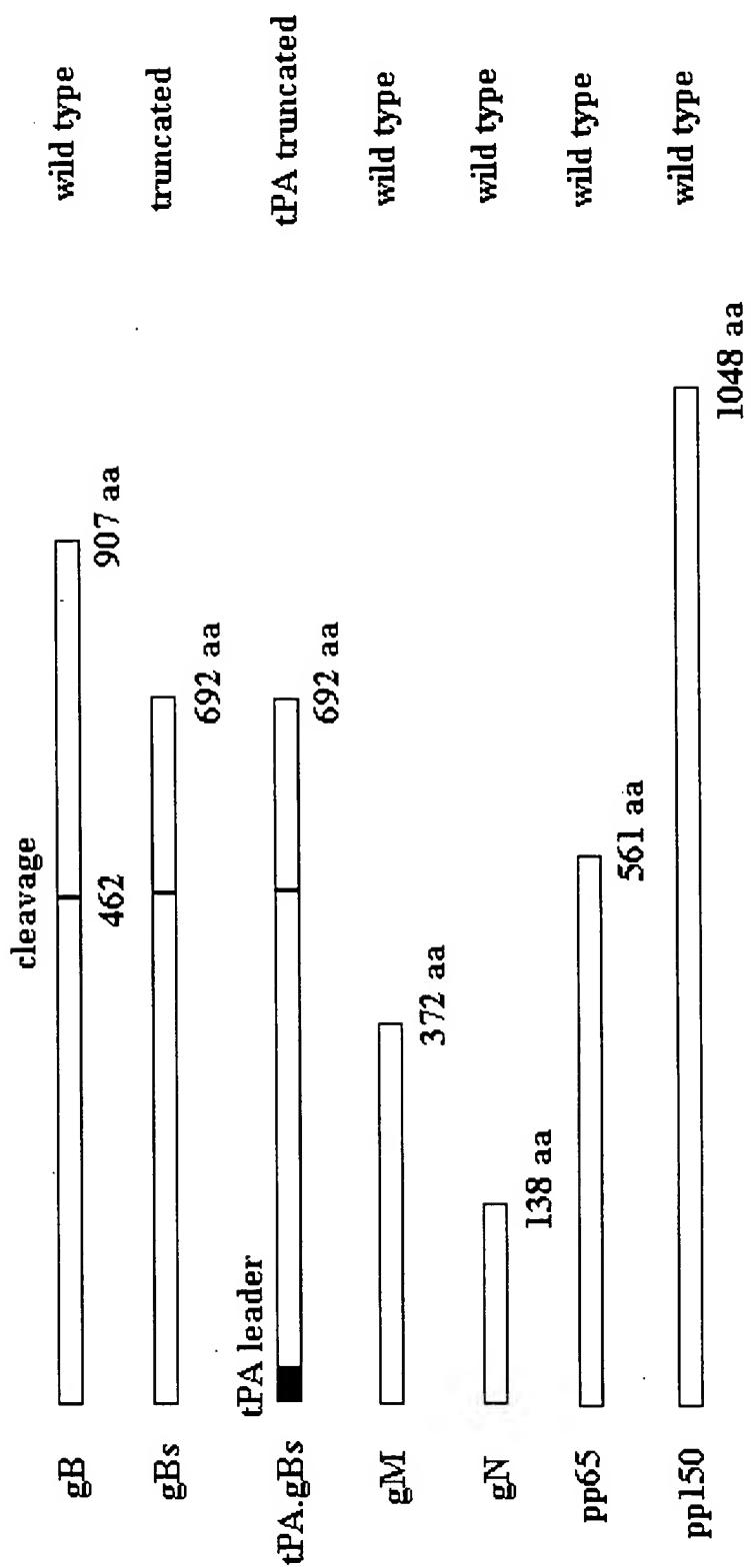


FIG. 1

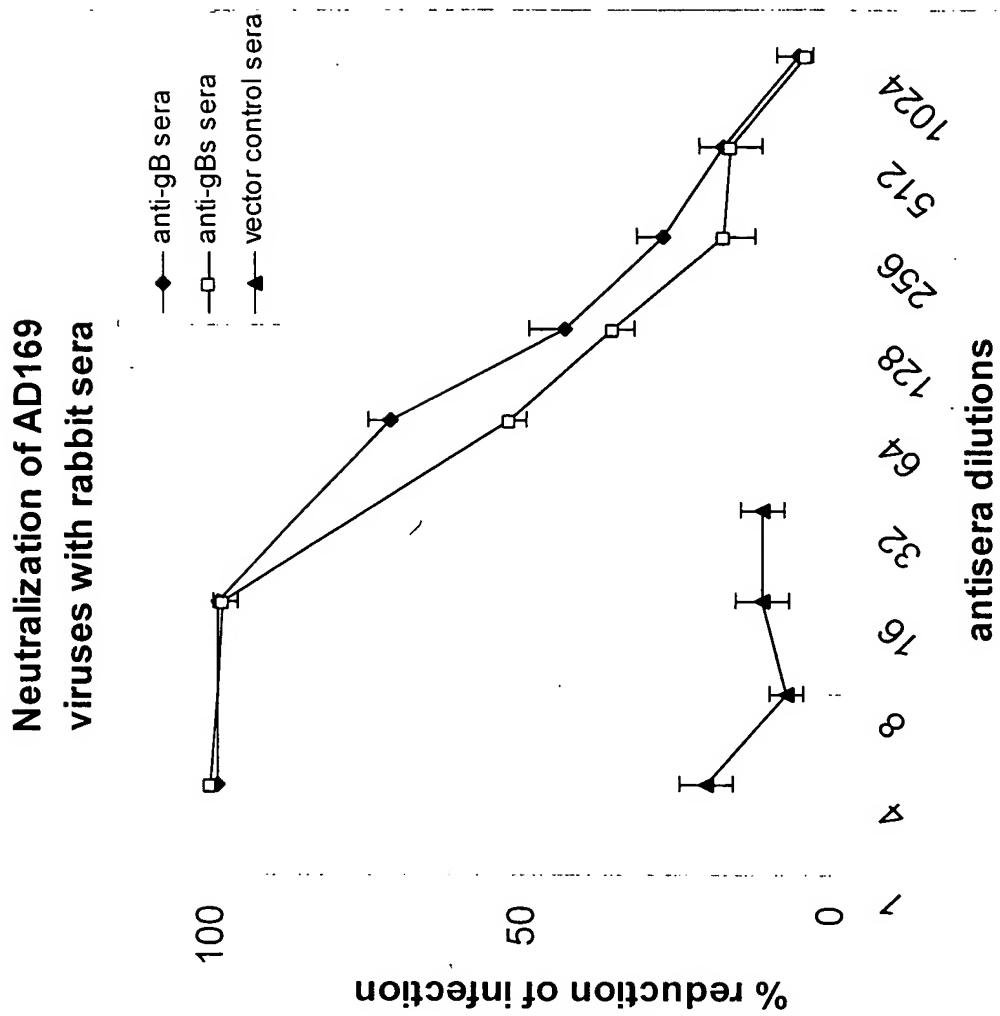


FIG. 2

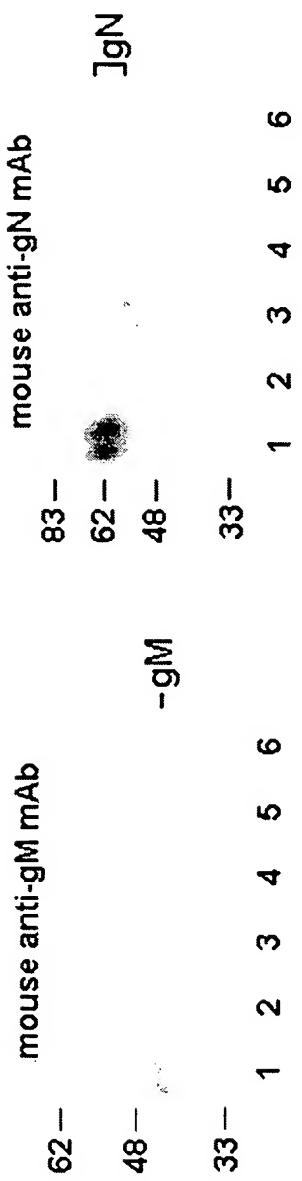


FIG. 3B

FIG. 3A

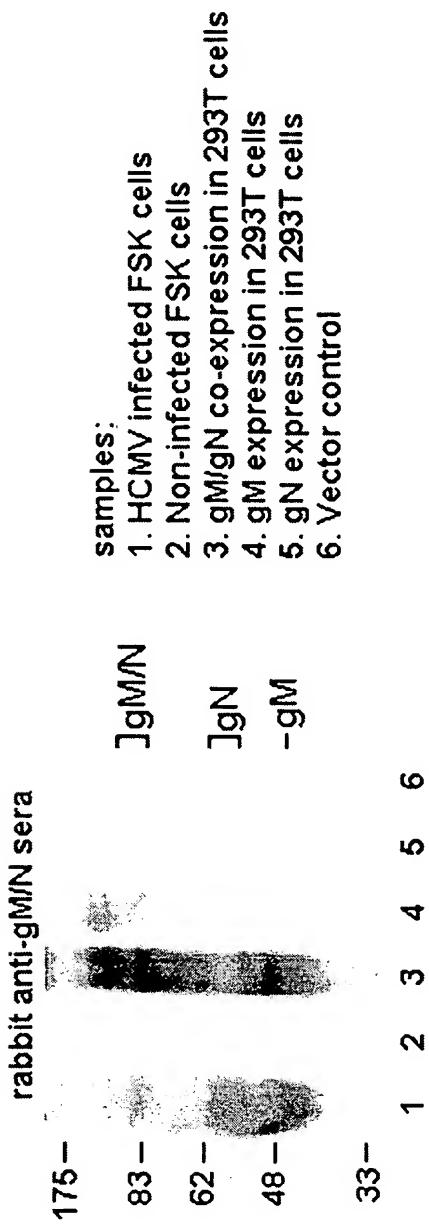
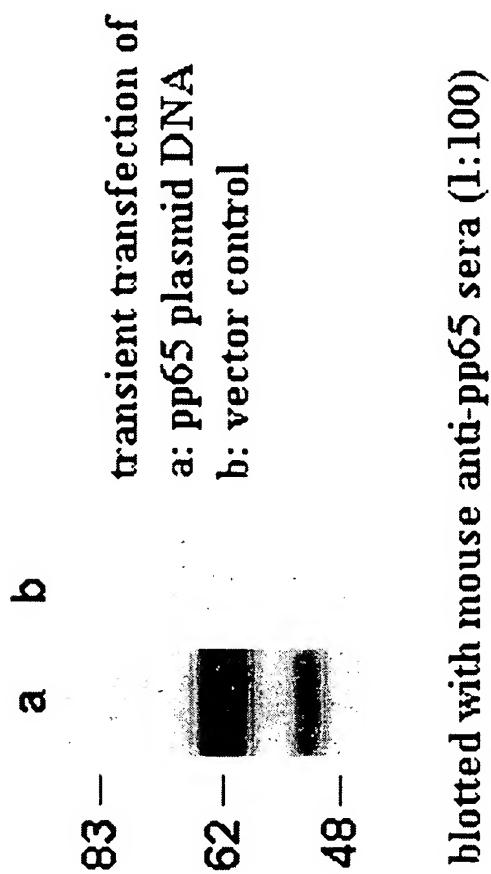


FIG. 4



blotted with mouse anti-pp65 sera (1:100)

FIG. 5

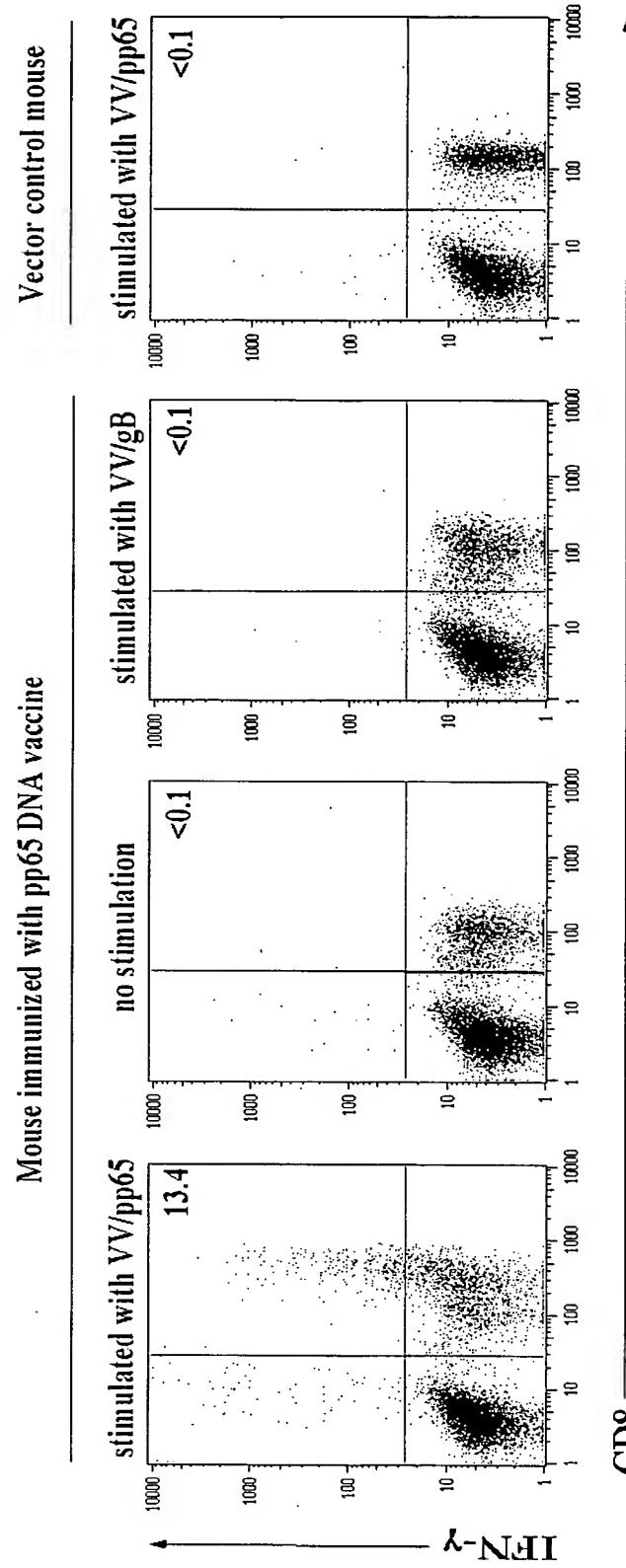


FIG. 6A FIG. 6B

FIG. 6C

FIG. 6D

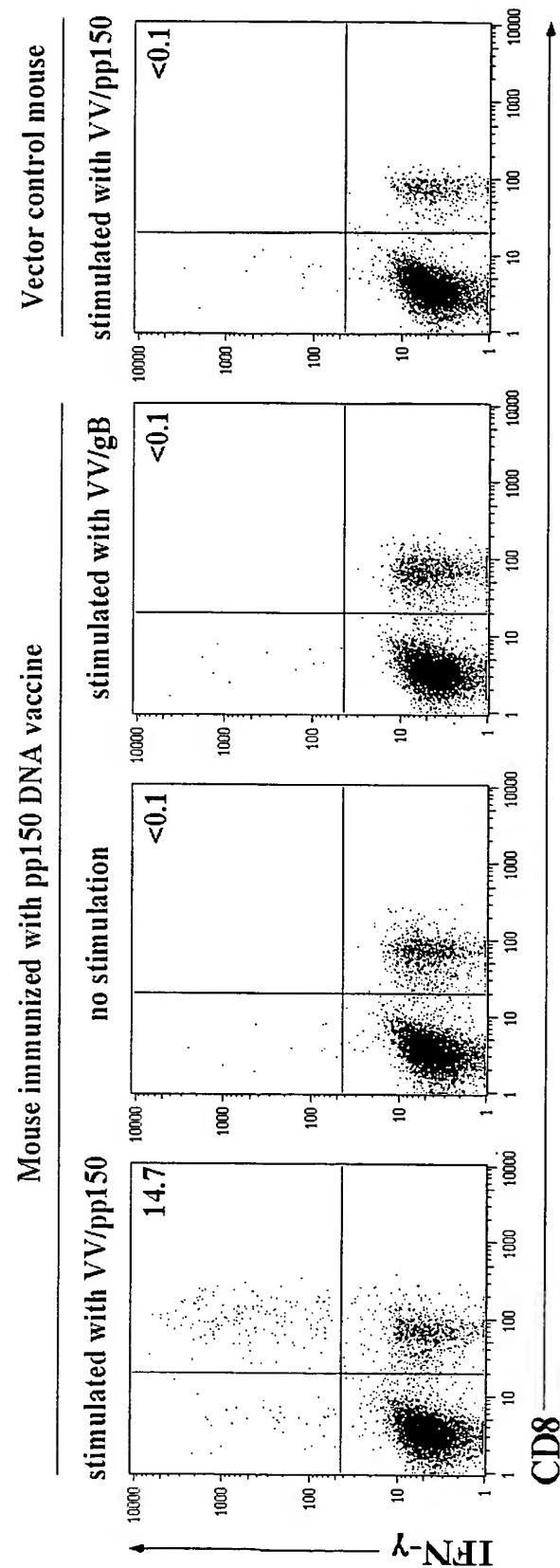


FIG. 7A

FIG. 7C

FIG. 7D

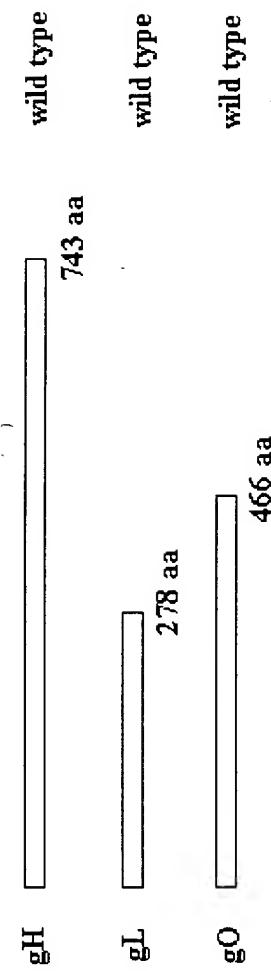


FIG. 8A

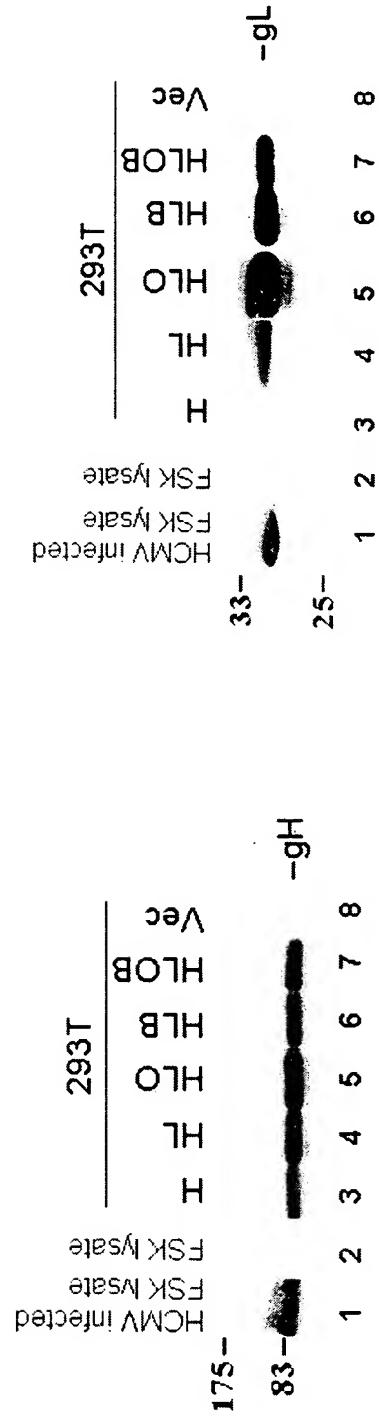
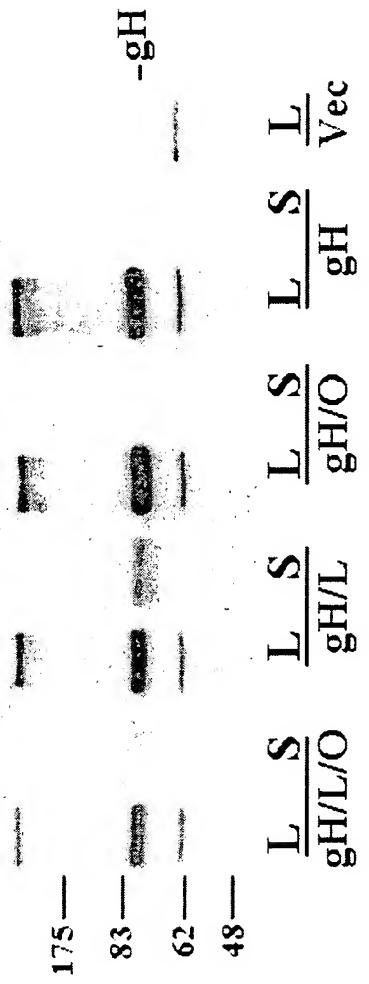
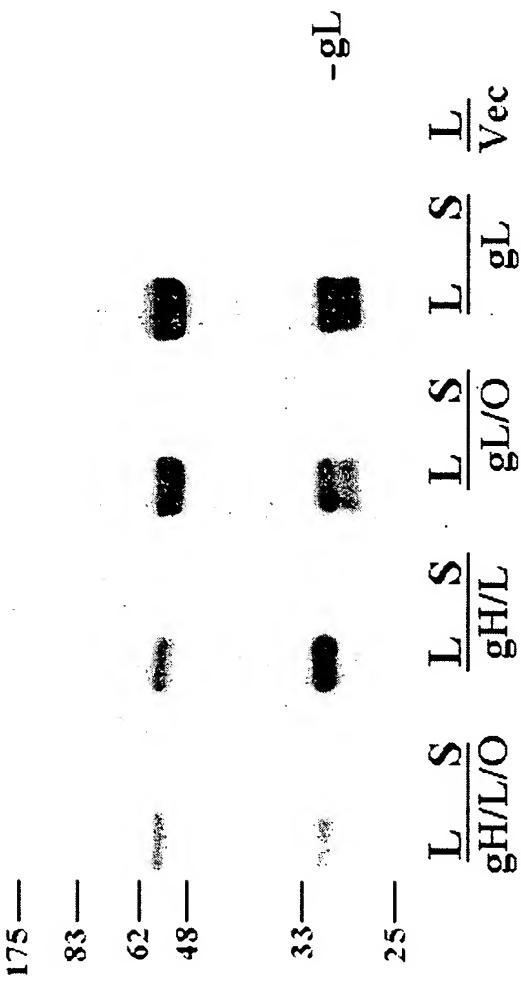


FIG. 8B

FIG. 8C

gH Expression**FIG. 9A****gL Expression****FIG. 9B**

HCMV gB cDNA Sequence

ATGGAATCCAGGATCTGGTGCCTGGTAGTCGCTTAACCTGTATCGTCTGTCTGGGTGCTG
 CGGTTCCCTCTTAGTACTTCCCAGCAACTCTACTCACAATGGAAGCCATACTTCTCG
 TACGACGTCTGCTCAAACCCGGTCAGTCTATTCTCAACACGTAACGTCTGAAGCCGTCA
 TCATAGAGCCAACGAGACTATCTACAACACTACCCTCAAGTACGGAGATGTGGTGGAGTCA
 ACACTACCAAGTACCCCTATCGGTGTGTTCTATGGCCAGGGTACGGATCTTATCGCTTG
 ACGTAATATCATCTGCACCTCGATGAAGCCTATCAATGAAGACTTGGATGAGGGCATCATGGT
 GGTCTACAAGCGAACATCGTGGCGCACACCTTAAGGTACGGGTCTACAAAAGGTTTGAC
 GTTTCGTCGTAGCTACGCTTACATCTACACCACTTATCTGCTGGCAGCAATACGGAATACGT
 GGCGCCTCCTATGTGGAGATTCATCACATCAACAAGTTGCTCAATGCTACAGTTCCTACAG
 CCGCGTTAGGAGGCACGGTTCTGTGGCATATCATAGGGACAGTTATGAAAACAAAACCAT
 GCAATTAAATTCCCAGCATTATTCAACACCCACAGTACCCGTTACGTGACGGTCAAGGATCA
 GTGGCACAGCCCGGGCACCTGGCTTACGTGAGACCTGTAATCTGAACGTATGCTGAC
 CATCACTACTGCCGCTCCAAGTATCCTTATCATTTTTGCAACTTCCACGGGTGATGTGGTT
 TACATTTCTCCTTCTACAACGGAACCAATCGCAATGCCAGCTACTTGGAGAAAACGCCAG
 AAGTTITCATTTCCCGAACTACACCACGTTCCGACTTGGAGACCCAACGCTGCCAG
 AAACCCATAGGTTGGTGGCTTCTGAACGTGCCGACTGGTATCTTGGGATATACAGG
 ACGAGAAGAATGTCACCTGCCAGCTCACCTCTGGGAAGCCTCGGAACGTACTATCCGTTCCG
 AAGCCGAAGACTCGTACCACTTTCTGCCAAAATGACTGCAACTTTCTGTCTAAGAAC
 AAGAAGTGAACATGTCCGACTCCCGCTGGACTGCGTACGTGATGAGGCTATAAAAGTTA
 CAGCAGATTTCAATACTTCATACAATCAAACATATGAAAATACGAAACGTGTCCGTCTTC
 GAAACCAGCGCGGTCTGGTGGTCTGGCAAGGCATCAAGCAAAATCTTGGTAATT
 GGAACGTTGGCAATCGATCCAGTCTGAATATCACTCATAGGACCAAGAAGTACGAGTG
 ACAATAATACAACCTATTGTCCAGCATGGAATCGGTGACAATCTGGTCTACGCCAGCTGC
 AGTTACCTATGACACGTTGCCGGTTACATCAACCGGGCGCTGGCAAAATCGCAGAACGCT
 GGTGTGTGGATCAACGGCGACCCCTAGAGGTCTTCAAGGAACTCAGCAAGATCAACCCGTCA
 GCCATTCTCTCGGCCATTACAACAAACCGATTGCCGCGCTTACATGGGTGATGTCTGGGCC
 TGGCCAGCTGCGTGACCATCAACCAAAACCGCGTCAAGGTGCTGCGTATGAACGTGAAG
 GAATCGCCAGGACGCTGCTACTCACGACCCGTGGTCATCTTAAATTGCCAACAGCTCGTAC
 GTGCAGTACGGTCAACTGGCGAGGACAACGAAATCTGTGGCAACCACCGCACTGAGGA
 ATGTCAGCTTCCCAGCCTCAAGATCTTACATGCCGGAACTCGGCCTACGAGTACGTGGACTA
 CCTCTCAAACGCATGATTGACCTCAGCAGTATCTCCACCGTCGACAGCATGATGCCCTGGA
 TATCGACCCGCTGGAAAATACCGACTTCAGGGTACTGGAACCTTACTCGCAGAAAGAGCTGCG
 TTCCAGCAACGTTITGACCTCGAAGAGATCATGCGCAATTCAACTCGTACAAGCAGCGGGT
 AAAGTACGTGGAGGACAAGGTAGTCGACCCGCTACCGCCCTACCTCAAGGTCTGGACGACC
 TCATGAGCGGCTGGCGCCGGAAAGGCCGTTGGCGTAGCCATTGGGCCGTGGTGG
 GCGGTGGCCTCCGTGGCGAAGGCCGTTGGCCACCTTCTCAAAAACCCCTCGGAGCCTTCACC
 ATCATCCTCGTGGCCATAGCGTAGTCATTACTTACATTGATCTATACTCGACAGCGCGTC
 TGTGCACGCAGCCGCTGAGAACCTCTTCCCTATCTGGTGTCCGCCAGGGACCCACCGTGA
 CGTCGGCAGCACCAAAAGACACGTCGTTACAGGCTCCGCCCTACGAGGAAGTGTTTATA
 ATTCTGGTCGCAAAGGACCGGGACCCACCGTCGATGCACTCACGGCGCTCCGCCTTACA
 CCAACGAGCAGGTTACCAAGATGCTTCTGCCCTGGCCGTGGACGCAGAGCAGCGAGCG
 CAGCAGAACGGTACAGATTCTTGACGGACAGACTGGCACGCAGGACAAGGGACAGAACGCC
 TAACCTGCTAGACCGGCTGCGACATCGCAAAACGGCTACAGACACTTGAAAGACTCCGACG
 AAGAAGAGAACGTCTGA (SEQ ID NO:1)

FIG. 10

HCMV gB Amino Acid Sequence

MESRIWCLVVCVNLCIVCLGAAVSSSSTSHATSSTHNGSHTSRTSAQTRSVYSQ
HVTSEAVSHRANETIYNTTLKYGDVVGVNTTKYPYRVCMSAQGTDLIRFERNII
CTSMKPINEDLDEGIMVVYKRNIVAHTFKVRVYQKVLTFRRSYAYIYTTYLLGSN
TEYVAPPWEIHHINKFAQCYSSYSRVIGGTVFVAHYRDSYENKTMQLIPDDYS
NTHSTRYVTVKDQWHSRGSTWLRETCNLNCMLTITTARSKYPYHFFATSTGDV
VYISPFYNGTNRNASYFGENADKFFIFPNYTIVSDFGRPNAAPETHRLVAFLERAD
SVISWDIQDEKNVTCQLTFWEASERTIRSEAEDSYHFSSAKMTATFLSKKQEVNM
SDSALDCVRDEAINKLQQIFNTSYNQTYEKYGNVSFETSGGLVVFWQGIKQKS
LVELERLANRSSLNITHRTRRSTSNNNTHLSSMESVHNLVYAQLQFTYDTLRGY
INRALAQIAEAWCVDQRRTLEVFKELSKINPSAILSAYNKPIAARFMGDVLGLAS
CVTINQTSVKVLRDMNVKESPGRCYSRPVVIFNFANSSYVQYGQLGEDNEILLGN
HRTEECQLPSLKIFIAGNSAYEYVDYLFKRMIDLSSISTVDSMIALIDPLENTDFR
VLELYSQKELRSSNVFDLEEIMREFNSYKQRVKYVEDKVVDPPLPPYLKGDDLM
SGLGAAGKAVGVAIGAVGGAVASVVEGVATFLKNPFGAFTIILVIAAVVIITYLIY
TRQRLCTQPLQNLFPYLVSADGTTVTSGSTKDTSLQAPPSYEESVYNSGRKGPG
PPSSDASTAAPPYTNEQAYQMLLALARLDAEQRAQQNGTDSLQGTQDKGQ
KPNLLDRLRHRKNGYRHLKDSDEEENV* (SEQ ID NO:2)

FIG. 11

HCMV gM cDNA Sequence

ATGGCCCCCTCGCACGTGGATAAGGTGAATACACGGACATGGAGCGCTTCTA
TCGTTTCATGGTGTGACTTTGTCAACGTCAGCGTGCATCTAGTGCTGAGC
AATTTCGCCACCTGGCTACCCCTGCGTCTACTATCACGTCGTGGACTTTGA
AAGGCTCAACATGTCGGCCTACAACGTAATGCACCTGCACACGCCTATGCTT
TCTTAGACTCGGTGCAGTTGGTGTGCTACGCCGTGTTCATGCAGCTCGTCTT
TTAGCCGTGACCCTACTACCTGGTATGCTGGATCAAGATCAGCATGCGCA
AGGACAAAGGCATGAGCCTAAACCAGTCGACACCGACATTCTGACATGGG
CGACAGCCTCACAGCCTTCCTCTTCATTCTCAGCATGGACACGTTCCAACAT
TCACACTGACCATGTCATTCTGGCTGCCAGCATGATGCCCTCATGGCCGCC
GTGCACTTTCTGCCTGACCATTTCAACGTGAGCATGGTCACGCAGTACCG
CAGCTACAAACGCTCACTCTTTCTCGCGTCTGCACCCCAAGCTCAAAG
GTACGGTGCAGTTCCGCACGCTCATCGTCAACCTGGTAGAGGTAGCGCTTGG
TTTCAACACCACCGTGGTAGCCATGGCCCTGTGCTACGGCTTCGAAAACA
TTTCTGCGTACAGGCCACATGGTGTAGCCGTCTCGTGGTCTACGCTATC
ATCTCCATCATCTACTTTACTGATCGAGGCCGTCTTTCAATACGTCAAG
GTGCAATTGGCTACCACCTGGCGCCTCTTGGACTCTGCGGCCATCTA
CCCCATCGTGCAGTACGATACTTCCTCAGCAACGAATACCGCACCGGCATC
AGCTGGTCGTTGGCATGCTCTTCAATATGGGCCATGTTACGACGTGTCG
CGCCGTCCGCTACTTCGGACGCGGTAGCGGAGTGTCAAGTACCAAGGGCG
CTGGCCACAGCCTCCGGCGAAGAAGTCGCTGTGCTCAGTCACCACGACAGCT
TGGAAAGCCGTCGCCTCCCGAAGAAGAGAGGACGACGACGATGATGAAGACT
TCGAGGACGCTAA (SEQ ID NO:3)

HCMV gM Amino Acid Sequence

MAPSHVDKVNRTRWSASIVFMVLTFVNVSVHLVLSNFPHLGYPVCYYHVVDDE
RLNMSAYNVMLHTPMLFLDSVQLVCYAVFMLEVLAFTIYLVCKWIKISMRK
DKGMSLNQSTRDISYMGDSLTAFLFILSMDFQLFTLMSFRLPSMIAFMAAVHF
FCLTIFNVSMVTQYRSYKRSRSLFFSRLHPKLKGTVQFRTLIVNLVEVALGFNTVV
AMALCYGFGNNFFVRTGHMVLAVFVVAIIISIYFLLIEAVFFQYVKVQFGYHLG
AFFGLCGLIYPIVQYDTFLSNEYRTGISWSFGMLFFIWAMFTTCRAVRYFRGRGS
GSVKYQALATASGEEAVLSSHDSLESRRRLREEEDDDDEDFEDA* (SEQ ID
NO:4)

FIG. 12

HCMV gN cDNA Sequence

ATGGAGTGGAACACACTAGTATTAGGTCTTTAGTTATCGTAGTGGCAGA
GAGTTCTGGTAACAATTCATCCACGTCAACCTCTGCAACTACATCAAAGTCTT
CTGCTAGCGTATCAACTACCAAACATAACAACAGTTGCAACAACCTCTGCAAC
AACTACGACGACTACGACCTATCGACAACTAGCACTAAACTCAGTTCTACC
ACCCACGATCCTAATGTGATGAGACGACATGCGAACGATGATTTCACAAGG
CGCATTGCACATCGCATATGTATGAGCTCTCACTGTCCAGCTTGCGGCCTGG
TGGACTATGCTTAATGCTCTAATTCTCATGGGAGCTTTGTATTGTACTACG
ACATTGCTGCTTCCAGAACTTACTGCAACCACCAAAAGGCTATTGA (SEQ
ID NO:5)

HCMV gN Amino Acid Sequence

MEWNTLVLGLLVLSVVAESSGNNSTSTSATTSKSSASVSTTKLTVATTSATT
TTTTLSTTSTKLSSTTHDPNVMRRHANDDFYKAHCTSHMYEELSSFAAWWTM
LNALILMGAFCLVRHCCFQNFTATTKGY* (SEQ ID NO:6)

FIG. 13

HCMV gH cDNA Sequence

ATGCGGGCCGGCTCCCCCCTACCTCACTGTCTCACCGTCTACCTCCTCAGTCACC
TACCTTCGCAACGATAATGGCGCGACGCCGCATCCGAAGCGCTGGACCCTCACGCAT
TTCACCTACTACTAACACACCTACGGGAGACCCATCCGCTCCTGCGTGAAAACACCA
CCCAGTGCACCTACAAACAGCAGCCTCCGTAACAGCACGGTCGTAGGGAAAACGCC
ATCAGTTCAACTTTCAAAGCTATAATCAATACTATGTATTCCATATGCCCTCGAT
GTCTTTGCGGGTCCTCTGGCGGAGCAGTTCTGAACCAGGTAGATCTGACCGAAA
CCCTAGAAAGATAACCAACAGAGACTTAACACCTACGCATTGGTATCCAAGACCTGG
CCAGCTACCGATCTTTCGCAGCAGCTGAAGGCACAAGACAGCCTGGGTAGCAGC
CCACCAACCGTGCACCGCCATTGATCTGCAATACCTCACGTTGGATGCCACCCCA
AACCACTCCACACGACTGGAAGGGATCGCACACCACCTGGGACTACATGCCAC
ACTTTAACCAGACCTGTATCCTCTTGTGGACACGATCTGCTTTCAGCACCGTTAC
GCCCTGTCTGCACCAGGGCTTTACCTCATGGACGAACACTACGTTACGTTAAATCAC
ACTGACCGAGGACTCTCGTAGTTACGGTATCTATAGACGACGACACACCCATGCT
GCTTATCTTCGGTCATCTTCACCGTACTCTCAAAGCGCCCTATCAACGGGACAAC
TTTATACTACGACAAACTGAAAAACACAGAGCTCCTGGTACTAGTTAAGAAAGCTCAA
CTAAACCGTCACTCCTATCTCAAAGACTGGACTTCTGACGCCGACTCGACTTCA
ACTACCTGGACCTCAGCGACTGTTACGTAACAGCTTCACCGTTACGCTGTAGACGT
ACTCAAAAGCGGTGATGTCAAATGTTGGACGCCGACGGTAGAAATGGCCTTCGC
CTACGCATTAGCACTGTCGGCAGCCGACAAGAAGAGGGCCGGACCGAAATCTC
CATCCCACGAGCCCTAGACCGCCAGGCCGACTCTTACAAATACAAGAATITATGAT
CACCTGCCTCTCACAAACACCACACGCAACATTGCTGCTATATCCCACAGCCG
GGACCTGGCCAAACGAGGCCCTCTGGACGCCGACAGATCACCGACATCACCGCCT
CGTACGCCTGGTCTACATACTTTCTAAACAGAACATCAGCAACATCTCATTCCCCAGTGG
GCACTACGACAGATGCCGACTTGCCTACAATTACACAAAACGCACCTGGCCT
TTTCTTCAGCCTTCGCGCGCCAAGAACCTACCTCATGGCAGCCTCGTCCACTCCA
TGTTGGTACATACGACGGAGAGAGACGCGAAATCTCATCGTAGAAACGGGCTCTGTT
CATTGGCCGAGCTATCACACTTACGCAAGTGTCTGCTACCGTACCGTACCGCC
CAGCGACCTGTACACACCCCTGTTCCAGTAGCGGGCGACCGGATCACTCGCTCGAACG
CCTCACCGCTCTTCCCCGATGCCACCGTTCTGCTACCGTACCGCCGCCCCCTCC
ATCCTATCTACCATGCAACCAAGCACGCTGGAAACCTTCCCCGACCTGTTTGTCTGC
CGCTGGCGAATCCTCTCCCGCTAACCGTCTCCGAACACGTCAGTTATGCGTAAC
AAACCAAGTACCTGATCAAAGGTATCTCCTACCCCTGTCTCCACCAACCGTCTGAGGCA
GAGCCTCATCATACCCAAACGGACAGTCAAACACTAAATGCGAACTAACCGCGAAC
TGCACACCACACAGCATCACAGCGCGCTCAACATTCACTAGAAAACGCGCCT
TTTGCCAAAGCGCCCTGCTAGAATACGACGACACGCAAGGCGTACCGTACCGC
ACATGACGACTCGGACGACGTCTTTCGCCCTGGATCCCTACACGAAAGTGGTGG
TCTCATCTCCCGGAACTCACCTACCTCATGCTTTGAAAAACGGTACGGTCTAGAAGT
AACTGACGTCTCGTGGACGCCACCGACAGTCGTCTCCATGATGTCCTACCGC
GCTATCGGCCATCATCGGCATCTATGCTCTACCGCATGCTCAAGACATGCTGA
(SEQ ID NO:7)

FIG. 14

HCMV gH Amino Acid Sequence

MRPGLPPYLTVFTVYLLSHLPSQRYSRGAASEALDPHAFHLLLNTYGRPIRFLRE
NTTQCTYNSSLRNSTVVRENAISFNFFQSINYVFMMPRCLFAGPLAEQFLNQV
DLTETLERYQQRLNTYALVSKDLASYRSFSQQLKAQDSLGGQQPTTVPPPIDLSPH
VWMPPQTTPHDWKGSHHTSGLHRPHFNQTCILFDGHDLLFSTVTPCLHQGFYLM
DELRYVKITLTEDFFVVTVSIDDDTPMLLIFGHLPRVLFKAPYQRDNFILRQTEKH
ELLVLVKKAQLNRHSYLNKDSDFLDAALDFNYLDLSALLRNSFHRYAVDVLKSGR
CQMLDRRTVEMAFA~~Y~~ALALFAAARQEEAGTEISIPRALDRQAALLQIQEFCMITCL
SQTPRRTLLYPTAVDLAKRALWTPDQITDITSVRLVYILSKQNQQHLIPQWAL
RQIADFALQLHKTHLASFLSAFARQELYLMGSLVHSMVLVHTTEREIFIVETGLCS
LAELSHFTQLLAHPHHEYLSDLYTPCSSSGRRDHSLERLTRLFPDATVPATVPAA
LSILSTMQPSTLETFPDLCPLGESFSALTVSEHVSYVVVTNQYLIKGISYPVSTV
VGQSLIITQTDSQTKECELTRNMHTHSITAALNISLENCAFQSALLEYDDTQGVI
NIMYMHDSDDVLFALDPYNEVVVSSPRTHYLMLLKNGTVLEVTDVVVDATDSR
LLMMSVYALSAIIGIYLLYRMLKTC* (SEQ ID NO:8)

FIG. 15

HCMV gL cDNA Sequence

CGTTTAGGGATCGAAGACCTGAGCGCCAACCTTCGGCGCCAACGGCTCCTT
ACCGTCACACTCTCATCGTGCAGACTGATGTGCCGCCGGATTGCG
GCTTCTCTTCTCACCTGGACC GGTTACTGCTGTGGTGTGCCTCTGCTGC
CCATTGTT CCTCAGTCGCCGTAGCGTCGCTCCTACCGCCGCCGAGAAAGTC
CCC CGGAGTGCCCCGA ACTAACCGCGTCATGCCCTGGTGGTGAGGTGTTTC
AGGGTGACAAGTATGAAAGTTGGCTGCGCCCGTTGGTAATGTTACCA GACG
CGATGGCCCGCTATCGCAACTTATTGTTACCGTCCCGTTACGCCGGAGGCCG
CCA ACTCCGTGCTGTTGGACGATGCTTCCCTGGACACTCTGCCCTGCTGTAC
AACAAATCCGGATCAATTGCGGGCCCTGCTGACGCTGTTGAGCTCGGACACAG
CGCCCGCGCTGGATGACGGT GATGCGCGCTACAGCGAGTGC GGCGATGGCTC
GCCGGCCGTTGACACGTGCGTGGACGACCTGTGCCCGGCTACGACCTCACG
CGACTGTCAACGGCGCAGCATCTCACGGAACACGTGTTAGGCTCGAGC
TGGTGCCACCGTCTCTCTTAAACGTGGTGGGCCATACGCAACGAAGGCCAC
GCGTACCAACC CGGCCGTGCGTCTGCCGTGAGCACC GCTGCCGCCGAG
GGCATCACACTCTTACGGCCTGTACAACCGAGTGAAGGAATTCTGCCTGCG
TCACCAGCTGGACCCGCCGCTACTACGCCACCTAGATAAAACTACGCCGGA
CTGCCGCCGAGCTGAAGCAGACGCCGTCAACCTGCCGGCTACTCGCGCT
ATGCCCTCAAGCAGTGGATGCTCGCTAA (SEQ ID NO:9)

HCMV gL Amino Acid Sequence

RFRDRRPERQLSAPTGSPLSHRAADLMCRPDCGFSFSPGPVVLWCCLLP
VSSVAVSVAPTAEEKVP AECPELRRCLLGEVFQGDKYESWLRPLVN
VTRRDGP LSQLIRYRPVTPEAANSVLLDDAFLDTLALLYNNPDQLRALL
LSSDTAPRWMT VMRGYSEC GDGSPA VYTCVDDLCRGYDLTRL
SYGRSIFTEHVLGFELVPPSLFNV VVAIRNEATRNRAVRLPV
STAAPEGITLFYGLYNAVKEFCLRHQ LDPPPLL RHL
DKYYAGLPPELKQTRVNLPAHSRYGPQAVDAR* (SEQ ID NO:10)

FIG. 16

HCMV gO cDNA Sequence

ATGGGGAGAAAAGAGATGATGGTGAGAGACGTCCCTAAGATGGTGTTCCTAA
 TATCTATATCTTCTGCTGTTCTTCATAAAACTGTAAAGTTATGTCAAAAG
 CGCTTATAATCGTCCTGGAGGGGCTGGTACTGTCTAACAGATAGGCAAATAT
 AAATTAGATCAGCTTAAGTTAGAAATTGAGACAACTAGAAACGACTATT
 CTACAAAATACAATGTAAGTAAACAACCGGTAAAAATCTCACTATGAACAT
 GACAGAGTTCCACAATACTACATTAGCGGGCCCCATTAGAATTATAGTA
 TAACCTATCTGTGGTTGATTTATAGTACCCAGCTAGAAAACCCGCAAAA
 TACGTTACTCACAGTACAATCATACGGCTAAAACGATAACATTAGACCCCC
 CACCTTGTGGTACTGTGCCTCCATGACTGTCTTCGAAATGCTAACGTT
 CCAAACGTAATGATACTGGCGAACAGGTTGCGTAATTCAACCACGTTCAA
 CCCCATGTTTCAATGTACCGCGTGGAACACCAAATTGTACGTGGTCCGA
 CTAAGGTTAACGTAGATAGTCAAACGATTATTTCTAGGTTAACCGCCCTG
 CTTTACGTTACGCACAACGCAACTGTACACACAGTTCTACCTGGTTACGC
 CATGAGCCGGAATCTATTGCGTCCCCAAGTATAATTACGGCACCAAGTTA
 AAAAACACTATGCGAAAACCTAAACGTAACACAAGCGCCGTTAGGAACAA
 TTCGAAAAAAAGCTAAGAAAACCTAGAGTACTACTACGCCATACTTTCT
 ATACAACGCTGCCGCTCTCAACGTCACTACTAACGTGACTTATAGTATTACT
 ACCGCCGCAAGGCAGGTTCCACGTCTACAATTGCTTATCGTCTGATAGCAG
 CTTTATGAAGTCCATTATGCCACACAGTTAAGGGACCTAGCAACGTGGTG
 TATACCACTCTACGTTACCGGAAAATCCTTTGTGAACCAAGCCGCAACCG
 AACCGCCGTGTCAGAATTGAAAAACACGCACGTACTAACCGTAACGAA
 ACGCCGTACACTATTACGGTACTCTCGACATGAGCTCTTATATTACAACGA
 AACCATGTTCGTGGAAAACAAAACAGCTCCGATAGTAACAAAACACACT
 ACGTCACCATCAATGGGGTTTCAGAGAACATTATAGATCCCCTGTGGGACT
 ATCTAGACTCGCTGCTGTTCTAGATGAGATTGTAACTTAGCCTCCGGTCA
 CCCACGTATGTAACCTTACCCGCCGAACACCGCCGGCTGAAATCTGT
 CCACCTCAATAGCCTTGGTGGTGGTGCAGTAA (SEQ ID NO:11)

HCMV gO Amino Acid Sequence

MGRKEMMVRDVPKMVFLISISFLLVSFINCKVMSKALYNRPWRGLVLSKIGKYK
 LDQLKLEILRQLETTISTKYNVSKQPVKNLTMNMTEFPQYYILAGPIQNYSITYLW
 FDFYSTQLRKPAKYVYSQYNHTAKTITFRPPPCGTVPMSMCLSEMLNVSKRNDT
 GEQGCGNFTTFNPMMFNPRWNTKLYVGPTKVNVDQSQTIFYFLGLTALLRYAQR
 NCTHSFYLVNAMSRNLFRVPKYINGTKLKNTMRKLKRQAPVKEQFEKKAKKT
 QSTTPYFSYTTSAALNVTTNVTYSITTAARRVSTSTIAYRPDSSFMKSIMATQLR
 DLATWVYTTLRYRQNPCEPSRNRTAVSEFMKNTHVLIRNETPYTIYGTLDMSSL
 YYNETMFVENKTASDSNKTTPTSPSMGFQRTFIDPLWDYLDSSLFLDEIRNFSLRS
 PTYVNLTPEHRRAVNLSTLNSLWWWLQ* (SEQ ID NO:12)

FIG. 17

HCMV pp65 cDNA Sequence

ATGGAGTCGCGCGGTCGCCGTGTCGGAAATGATATCCGTACTGGGTCCCATTCTG
 GGGCACGTGCTGAAAGCCGTGTTAGTCGCGGCATACGCCGGTCTGCCGACGAG
 ACGCGACTCCTGCAGACGGGTATCCACGTACCGTGAGCCAGCCCTCGCTGATCTG
 GTATCGCAGTACACGCCGACTCGACGCCATGCCACCAGCGGCAACAATCAGCTGCA
 GTGCAGCACACGTACTTACGGCAGCGAGGTGGAGAACGTGTCGGTCAACGTGCA
 CAACCCCACGGGCCGAAGCATCTGCCCGAGCCAGGAGCCATGTCGATCTATGTGTA
 CGCGCTGCCGCTCAAGATGCTGAACATCCCCAGCATCAACGTGACCAACTACCGTC
 GGCAGGCCGAGCGCAAACACCGACACCTGCCGTAGCTGACGCTGTGATTACCGC
 GGGCAAGCAGATGTGGCAGGGCGTCTCACGGTCTCGGGACTGGCCTGGACGCGTC
 AGCAGAACCAAGTGGAAAGAGGCCGACGTCTACTACACGTGACGCTTCGTGTTCCA
 CCAAGGACGTGGCACTGCCGACGTGGTGTGCCGACCGAGCTGGTTGCTCCATGG
 AGAACACGCCGCAACCAAGATGCAAGGTGATAGGTGACCAAGTACGTCAAGGTGTAC
 CTGGAGTCCTCTCGCAGGGACGTGCCCTCCGGCAAGCTCTTATGCACGTCACGCTG
 GGCTCTGACGTGAAAGAGGACCTGACGATGACCCGCAACCCGCAACCCTCATGCC
 CCCCACGAGCGCAACGGCTTACGGTGTGTCACGGTACAGTAACTGTTGAC
 GGCAAGATCTCGCACATCATGCTGGATGTGGCTTACCTCACACGAGCATTITGGG
 CTGCTGTGTCACGGTACAGTCCGGAGGTACAAGCCATACCGAGACCGTGGAACTGCGTCA
 GTACGATCCCGTGGCTGCGCTCTCTTCGATATGACTTGCTGCTGCAGCGCGG
 CCTCAGTACAGCGAGCACCCACCTCACCGAGCCAGTATCGCATCCAGGGCAAGCTT
 GAGTACCGACACACCTGGGACCGGCACGACGAGGGTGCCGCCAGGGCAGCACGA
 CGTCTGGACCAGCGGATCGGACTCCGACGAAGAACTCGTAACCACCGAGCGCAAGA
 CGCCCCCGCTCACCGGGCGGCCATGGCGGCCCTCCACTCCGCCGGCGCA
 AACGCAAATCAGCATCTCGCGACGGCGTGCACGTGGCGTTATGACACGCGGCC
 GCCTTAAGGCCGAGTCCACCGTCGCGGCCGAAGAGGACACCGACGAGGATTCCGAC
 AACGAAATCCACAATCCGGCGTGTTCACCTGGCGCCCTGGCAGGCCGGCATCCTG
 GCCCGCAACCTGGTGCCATGGTGGCTACGGTTCAGGGTCAGAATCTGAAGTACCAAG
 GAATTCTTCTGGACGCCAACGACATCTACCGCATCTCGCCGAATTGGAAGGGCGTA
 TGGCAGCCCGCTGCCAACCCAAACGTCGCCGCCACCGCAAGACGCCATTGCCGGG
 CCATGCATCGCCTCGACGCCAAAAAGCACCGAGGTTGA (SEQ ID NO:13)

HCMV pp65 Amino Acid Sequence

MESRGRRCPEMISVLGPISHVLA
 VFSRGDTPVLPHE
 TRLLQTGIHVRSQPSLILVSQY
 TPDSTPCRGDNQLQVQHTYFTGSEVENSVNVHNPTGRSICPSQEPM
 SIYVYALPLKML
 NIPSINVHHYP
 SAAERKHRHLPVADA
 VIHASGKQM
 WQARLT
 VSGLAWTR
 RQQNQWKEPD
 VYYTSAFV
 PTKDVALRHVV
 CAHEL
 VCS
 MENTR
 ATKM
 QVIGDQY
 KVY
 LESFC
 EDVPS
 GKLF
 MHVT
 LGSDVE
 ELD
 TMTRNP
 QPFMR
 PHERNG
 FVLC
 PKNM
 IIPKG
 KISHIM
 LDVAFT
 SHEHF
 GLL
 CPKS
 IPGLS
 ISGN
 LL
 MN
 QQI
 FLEV
 QAIRE
 VEL
 RQY
 DPV
 AAL
 FFD
 D
 LLL
 QR
 GPQY
 SEH
 P
 T
 FTS
 QYR
 I
 QGK
 LEY
 R
 HT
 WDR
 H
 DEG
 AAQ
 G
 DDD
 V
 WT
 SG
 SD
 S
 DEEL
 V
 TTER
 KT
 PR
 VT
 GGG
 A
 M
 A
 G
 A
 S
 T
 S
 A
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 KR
 KS
 A
 S
 S
 A
 T
 S
 G
 V
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 (SEQ ID NO:14)

FIG. 18

HCMV pp150 cDNA Sequence

ATGAGTTGCAGTTATCGGTCTACAGCGGCCGATGTGGTAGCCCTGGTCAACTTCTGCCG
CATCTCACGAAAAGCCCCACGTGGATCTGAGGCACACCCAAAGATCCTGAAAAAATGTGG
CGAAAAAACGCCCTGCACCGCGTACGGTGTGTTCAACGAGCTCATGCTTGGTTGGATACTA
CCGCGAGCTGCGTTTCACAACCCCACCTCTCCTCAGTGCTGAGGAGTTGAGGTGCGTTG
CGTGGCGTGGCGTCCGGTACACTTACCGTTCGGTATCGTGGTAAGGCCGTGACCA
CCTGGCTGTGCTAGACCGTACCGAATTGATACGGACGTGCGCACGATGCCGAGATCGTGG
ACGCGCGCTCGTAAGCGCGTCACTGGCCAAGATGTCGTGCGAGACGCTGGTCACAG
CCATCGGCCAGACGGAACCCATGCCCTTGTGCACCTCAAGGATAACGGAGGTGAGCGCATTG
AAGAAAACCTGGAGGGTGTGCGCCGTAACATGTTCTGCGTAAACCGCTGACCTAACCTGG
ACCGGCACGCCAACACGGCGTGGTCAACGCCGTAACAAGCTCGTGTACACGGCCGTCTC
ATCATGAACGTGCGCAGGTCTTGGGAGGAGCTGGAGCGCAAATGTCGGCGCATTAGGA
GCGCTGCAAGCTGCTGGTCAAGGAGCTGCGCATGTGCTTCTTGTGATTCCAACACTACTGTC
AATATCCTCAAGCACGCCGTGGAAAACGGGACTCGGCCGACACGCTGTTGGAGCTGCTCATC
GAGGACTTGTATCTACGTGGACAGCTTCCCACAGTCGGCGCACACGTTTTGGCGCGC
TCGCCGTGTTGAGTTGACGATGACGCCAATCTCCTCTCGCTGGCGGCTGGCGCTTCT
CGTGGTACCCAGAAAACATGTCCCCACGCGCCGCTGGACGGCTGGAGCTGGATGCCAGT
CCCTGGAAGGGACACAAACCGTCCGCTCGAGGCCATGGTTCTGACCGGCGCAGCG
GCCACGCTGCCGTTGGCGACGAGGTGGTGCAGCGTGGAGAAACAGCAGCTGAAGGCTTGG
GAGAGGCAGCAGAACCTGCAGCAACGTACGCAACCACGCCCGCACGTAACCGAG
CGCCTCCCGAGGGCTTTGGCTCCAGTGCAGGACAGCAGGAGCTGATGAGA
AAAACATCTTACGCCATCAAGAAAACCGGAACAGCGCAAGGGCGCCGCTAGTGGTGG
GGTGTGTTCCAGCATTTCAGCGGCTGTTACCTCGGGCAGTCAGAAACCGACCGGGTCCC
TTGAACATCCCGCAACAACAACAGCGTACCGCGCTTCAGTCTGTCCTCCCGCAGGTGACC
AAGGCCAGCCCCGGAGGGTCCGCTGGGACAGCGCGTGGGACGTGAGGGCGCTACGGAGA
CCAGAGGGATCTTCTCGGGCAGCAGGAGATTCCGACAGCTCGGATGGCTATCCCCCAACC
GTCAAGATCCCGTTCACCGACACGCTGGTGGACATCACGGATACCGAGACGAGCGCCAAA
CCGCCGTACCAACCGCGTACAAGTTGAGCAACCGACGTTGACGTTGGCGCCGGAGTTAAC
GTTCTGCTGGCGCCGGCGCTGCCATCCTCACGCCAGCCTGTCAATCCTCACGGCCCC
GCTCCGGCCCCGACACCTACCTCGGGTACCCAAACCCCGTCAACGGTAACTCGCCCTGG
GCTCCGACGGCGCCGTTGGCGGGGATATGAACCCCGCAACTGGCCGGCGAACGCCGTG
GGCCCTCAAGAATCCTCACCTGGCTTACAATCCCTCAGGATGCCACTGACTTCCACGGCTTCT
CAAAACACCGTGTCCACCAACCCCTCGGAGGCCGTGACTCCACGCCGGCGGTGACACAAAC
AGCGTCTCGGACGCCGTGATGAGGTTGGCTTAAGGGACCAAACGAGTCACCGG
TCGAAGACAGCGAGGAGGAAGACGACGACTCCTCGACACCGGCTCCGTCAGCCTGG
CACACAACACCGTGTCCGATTACAACAACGACGTATTTCGCTCCAGTCAGACGCCGAG
CAGTCGACGCCGTCCAGAAATCGTAAGTTACGTCCTCAATGACGACGACATCCACG
AGCCAGAAACCGGTGCTGGCAAGCGAGTCGCGACGCCGACCGTCCGCCGAGCGCAGAC
GGTGACGTCACGCCGGTCAGGAAGGCTAGAGAAACAGGTGTCGGCACGCCGTGACGG
TACCCGCCACGCTGTTGCAACCTCAACCGGCTCGTCTAAACGACGTATCAAGGAACGTGA
CTTCTGGCGCGGGAACCTCTCGGCTTCTCGGCTCGACAGCCGTAGCCTCGGCTCCGTT
GTCGCCACGGAGGATGATGTCGTGTCCTCCGCAACATGCCGCTGTCCATGCTTGTCA
CTCTCCGTCCTGGCAAGAGTGGCCCGGCTCCGCTCGACAGCCGTAGCCTCGGCTCC
TGTTCTCTGGAAACCTACTTGGCGCAAGGCCGGTGGTAGGTCGACCGCCCTCGGT
CGTGAGCGTAGCGCGCCGGTCCGCTGTCGGCAGCAGCCGGCCCTGACCCAGCG
CGTATCCCGCGTAACCAACCGTTACCCACCGTCTACGCCAAAGCAGCGTATCGAATG
CGCCGCCCTGTGGCTCCCCCTCCATCCTGAAACCGGGGGAGCGCGGGCTTGCAATCACGCC
GCTCGACGGGGACGCCCGTGGTAGGTTCCCCGTCAAGAGCAGCACGGCATGAAAACGG
GCTTCGACCTATCGTCGCCCCAGAAGAGCGGTACGGGGCGCAACCGGGTTCTGCCGG
GGGGCGCCAAAACGCCGTGGACGCCGTGAGAACATCCTCAAAAGATCGAGAAGATTAA
GAACACGGAGGAATAG (SEQ ID NO:15)

FIG. 19

HCMV pp150 Amino Acid Sequence

MSLQFIGLQRRDVVALVNFLRHTQKPDVDLEAHPKILKKCGEKRHLRRTVLFN
ELMLWLGYYRELRFHNPDLSSVLEEFEVRCVAVARRGYTYPFGDRGKARDHLA
VLDRTEDTDVRHDAEIVERALVSAVILAKMSVRETLVTAIGQTEPIAFVHLKDT
EVQRIEENLEGVRRNMFCVKPLDLNLDRHANTALVNAVNLVYTGRLIMNVRR
SWEELERKCLARIQERCKLLVKELRMCLSFDSNYCRNILKHAVENGDSADTLEL
LIEDFDIYVDSFPQSAHTFLGARSPSLEFDDANLLSLGGGSFSSVPKKHVPTQP
LDGWSWIASPWKGHKPFRFEAH GSLAPAAEAAH AARSAAVGYYDEEEKRERQK
RVDDEVVQREKQQQLKAWEERQNLQQRQQPPPPARKPSASRRLF GSSADEDD
DDDDDEKNIFTPIKKPGTSGKG AASGGGVSSI FSGL LSSGSQKPTSGPLNIPQQQQ
RHA AFSLVSPQVTKAS PGRVRRDSA WDVRPL TETRGDLFSGDEDSDSSDGYP
RQDPRFTDTLV DITD TETSAKPPVTTAYKFEQPTLT FGAGVN VPAGAGAA ILTP
VNPSTAPAPAPTPTFAGTQTPVNGNSP WAPTAPLPGDMNPANWPRERA WALKN
PHLAYNPFRMPTTSTASQNTVSTTPR P STPRAAVT QTASRDA ADEVWA LRDQT
AESPV E DSEEE DDDSS DTGSVVSLGHTPSSDYNNDVISPPSQTPEQSTPSRIRKAK
LSSPMTTSTS QKPVLGKRVATPHASARAQTVTSTPVQGRLEKQVSGTPSTV
PAT LLQPQ PASSK TTSSRN VTSGAGTSSASSARQPSASASVLSPTEDDV
VSPAT SPLSM LSSASP SPAKS APPSPVKG RGS RVGVPSLKPTLGGKA VVGRPPSVP
VSGSAPGR LS GSSRAASTTPTYP AVTTVYPPSSTA KSSVS NAPPV ASPSILKPG
ASA ALQS RRSTG TAAVGSPVKSTTGMKTVAFDLSSPKSGTGPQPGSAGMGGAK
TPSDAVQ NILQK IEKIKNTEE (SEQ ID NO:16)

FIG. 20